

## ABSTRACT

A method and system of performing IP multicast includes a client at one of many downstream networks that sends a request signal to an upstream network via a return channel (e.g., the Internet), and the upstream network sends the request to a media server. The media server, and for live data, a media encoder, processes a media stream to generate a real-time IP multicast communication that is output to a unidirectional satellite that transmits the IP multicast communication to the client without delay via the downstream network, and can convert the IP multicast to unicast. The bidirectional return channel allows the source to calculate billing information based on client usage statistics, and transmits confirmation acknowledgement based on a confirmation request from the upstream network. Because the routing configuration is transparent to the rest of the network, the invention applies to multi-hop networks on both sides of the satellite link.